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NOTES AND DESCRIPTIONS OF SOME ETHIOPIAN MUSCIDAE (DIPTERA)

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A study of the Mydaeini of the world was undertaken several years ago, and the results of the study of Nearctic and Neotropical species have already been presented. The war, unsettled world conditions, and other considerations have greatly, if not completely, delayed its completion. Recently Van Emden's long-awaited final report on the Muscidae of the British Museum's Ruwenzori Expedition (1951) has appeared, and it seems appropriate to present descriptions and notes on certain additional species from the Ethiopian region.

Thanks are due to Dr. van Emden for his kindness in comparing some of the specimens described below with his material.

Holotypes of all new species will be deposited in the American Museum of Natural History.

***Pectinaseta equisetata*, new species**

Figures 1 and 2

MALE: Length, 3 mm. Head black, with dense silvery gray pruinescence. Viewed directly from above, the frontal vitta almost sky blue and without indications of a frontal triangle, but with gray parafrontals. In ventro-frontal view, the entire front is silvery, but there are indications of a faint frontal triangle which extends to the base of the antennae. Head shaped and bristled as shown in figures 1 and 2. The two reclinate frontal bristles on each side subequal or the anterior one slightly shorter than the posterior one, and both are considerably shorter than the anterior parafrontal bristle and the outer verticals, but subequal to, or slightly longer than, the proclinate and slightly convergent second an-

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terior parafrontal bristle. Antennae yellow, the second and apex of third segment with a trace of a dark shadow. All portions with dense, silvery, short pile or dust. Third segment elongated. Arista brownish, with eight or nine long rays on the entire length of the dorsal surface and two to four much shorter ones on the apical one-third of the ventral surface. Palpi slender, yellow. Proboscis shiny, dark brown.

Thorax black, grayish pruinulent. From above and behind the dorsum is unicolorous or with only extremely faint indications of a pale brown line along the planes of the dorsocentral bristles. Dorsocentrals 2:3, the anterior presutural dorsocentral very short and slightly smaller than the posthumeral bristle beside it; the anterior postsutural dorsocentral, though short, is about one-half as long as the second postsutural dorsocentral. Acrostical setulae in two to three irregular rows, more numerous postsuturally. Prae absent; two very short intra-alars. Scutellum with setulose dorsum and a pair of strong basal and apical bristles. Sternopleurals 3, situated in an equilateral triangle. Propleural and prostigmatal bristles duplicated, the lower prostigmatal shorter than the upper one and downwardly directed.

Legs entirely yellow, only the apices of the fore tarsi somewhat brownish. Fore femora with five to six posterodorsal and three to four posteroventral bristles, only the latter as long as femoral diameter. Fore tibiae without median bristles, only the dorsal and posteroventral subapicals longer than the tibial diameter, the posterodorsal subapical short, but distinguishable. Mid femora with three short but distinct ventral bristles on the basal one-third and a longer median anterior bristle; without any pre-apicals except a single one on the posterior surface. Mid tibiae with a median posterior and a distinct pre-apical ventral and a much shorter pre-apical anteroventral and posteroventral bristle. Hind femora with four widely placed anterodorsal bristles and three anteroventral ones, the most apical one longest and the basal one shortest. With a single distinct ventral bristle near the basal one-fourth. Hind tibiae with two anterodorsal and one anteroventral bristle, the latter beyond the level of the more apical anterodorsal one; without posterodorsal bristles but with the setulae on the apical one-third of this surface upright but not longer than tibial diameter; the pre-apical dorsal, anteroventral, and posteroventral bristles prominent, 0.33 to 0.50 as long as hind metatarsus, the pre-apical posterodorsal as long as tibial

diameter. Fore tarsi distinctly longer than the fore tibiae; other tarsi subequal to corresponding tibiae.

Wings hyaline, only the costa setulose, and it reaches the fourth vein. Third and fourth veins parallel beyond basal one-third of ultimate section of fourth vein. Halteres yellow, calyptrae white, the lower protruding well beyond the upper one.

Abdomen in profile narrow at base and much thickened dorsoventrally on apical portion. In dorsal view, sublanceolate. First visible tergite translucent yellow; base and lateral portion of second also yellow, but dorsum of this and other tergites dark brown to black except for a lateral apical yellow band on the third. Tergum with a broad brownish area over most of the second segment and a median subtriangular brown central spot on third and a pair of elongate oval spots on each side of the midline of third and fourth visible tergites. Fifth tergite prominent, distinct, and gray dusted; with a pair of well-developed bristles on either side of the midline. With similarly developed bristles along margin of the fourth and a single lateral discal on second and third visible tergites. Sternites reduced in length and somewhat obscured by the large size of the hypopygium, but the sternites appear dark near base and fulvous apically. Fifth sternite large, with prominent lateral processes and indications of a fringe of short hairs on them.

FEMALE: Length, 3.20 mm. Similar to the male, but the frons with less dense silvery pruinescence and a more distinct frontal triangle in dorsal and frontal views. Ventral rays of arista slightly longer and more numerous. Leg bristles longer and more prominent. Hind tibiae with two very short posterodorsal bristles which are not so long as tibial diameter, each situated slightly beyond level of the corresponding anterodorsal bristle.

Abdomen less constricted dorsoventrally at base. The basal segment not so prominently yellow and with indications of a dark dorsocentral vitta on the first three visible tergites.

TYPE MATERIAL: Holotype, male, Robertsport, Liberia, December 6, 1943; allotype, female, topotypical, April 4, 1943; paratype, male, topotypical, March 18, 1943 (F. M. Snyder). Taken near the native villages of Talla and Zoo.

This species is placed in *Pectiniseta* Stein with some hesitation. It appears to be another one of those forms that cause considerable difficulty in the arrangement of this family into well-ordered subfamilies and tribes. The fact that the anterior parafrontal bristle

is subequal to, or actually slightly shorter than, the posterior one might be considered to preclude it from the Coenosiinae (Van Emden, 1941, p. 253), but the arrangement of the prostigmatal bristles and the absence of an anterior pre-apical bristle on mid femora (Van Emden, 1951, p. 334) appear sufficient to justify placing it in the Coenosiinae rather than the Phaoniinae, if Van Emden's arrangement of subfamilies is followed. Its inclusion in *Pectiniseta* rather than *Lispocephala* appears to be in agreement with Malloch's (1929, p. 326; 1935b, p. 562) concepts of these genera.

Pectiniseta equiseta traces best to *Lispocephala miki* Strobl in Van Emden's key (1940, p. 97, 246), but the presence of much longer arisal hairs and subequal reclinate parafrontals will readily separate it from that species. The presence of ventral arisal hairs near apex will distinguish it from other Ethiopian species of *Pectiniseta* (Van Emden, 1940, p. 245).

***Limnophora vanemdeni*, new species**

Figure 3

MALE: Length, 4.8 to 5.3 mm. Head black, with silvery pruinescence on parafrontals, face, and cheeks. Back of head except for the narrow border near posterior margin of eyes (profile) velvety black. Frontal vitta black except for sparse silvery gray pruinescence adjacent to ocellar triangle. Profile as in figure 3. In frontal view, the front at level of the anterior ocellus and at base of the antennae is 0.200, and at narrowest part 0.133, of greatest head width. The posterior two parafrontal bristles backwardly and somewhat outwardly directed and with a few fine hairs which start about the middle of the front and are continued to opposite the anterior ocellus. Antennae and palpi black. Proboscis shiny black. Eyes bare.

Thorax black, when viewed from above and slightly behind, with dense silvery pruinescence on humeri and continued onto the notopleurae; these areas connected by a transverse band which extends anteriorly from transverse suture to the level of posterior presutural dorsocentral and the anterior posthumeral bristles. The middle of the anterior margin of this gray band is rather irregular but has no indication of a median, anteriorly directed, black stripe. With an additional transverse silvery pruinescent band from level of posterior intra-alar bristle and posterior post-sutural dorsocentral bristle to scutellar suture. The postalar cal-

losities black. Base of scutellum black, the apical one-third grayish, at juncture of these two areas the pruinescence is somewhat brownish. Thoracic pleura uniformly silvery gray pruinulent. Acrosticals 0:1; dorsocentrals 2:3; intra-alars 1; without setulae adjacent to base of either notopleural bristle. Scutellum with a pair of strong basal and apical bristles, the clothing setulae moderately numerous and confined to the dorsum and well within the area enclosed by the planes of these bristles. Sternopleurals 1:2, the posterodorsal one strongest and the posteroventral one weakest, the latter about two-thirds of the length and diameter of the anterior one. Mesopleura with a short but distinct bristle adjacent to the anterior notopleural bristle. Prosternum with short lateral setulae.

Legs black, the tibiae brownish black. Fore femora with the normal rows of bristles. Fore tibiae without median bristles. Mid femora with a few fine ventral hairs but without bristles except for the two pre-apical posteriors. Mid tibiae with two short median posterior bristles. Hind femora with the usual anterodorsal row and a strong anteroventral bristle on the apical one-fourth and sometimes one or two of the adjacent clothing setulae are somewhat strongly developed. Hind tibiae with a single submedian anterodorsal and anteroventral bristle.

Wings hyaline, but with a faint yellow-brown tinge. Fourth vein with a gentle forward curvature on apical one-third of ultimate section. First vein with at least one and usually several short but distinct setulae on dorsal surface near apex. Node with longer setulae on both surfaces. Other veins except costa bare. Posterior cross vein with a very slight inward curvature near middle. Calyptrae white, margins with a faint yellow tinge. Halteres yellow.

Abdomen black, viewed from above and behind, the first visible tergite with a narrow gray band laterally; the second and third with a pair of confluent subtriangular spots which extend anteriorly almost the length of the tergites and laterally to the edge of dorsum. Fourth tergite with a triangular brownish pruinulent spot which occupies all except its basolateral areas. With a row of distinct bristles at apex of third and fourth visible tergites and a discal row on the fourth. Basal sternite bare; fifth without prominent bristles on the lateral processes.

FEMALE: Length, 5.0 to 5.8 mm. Similar to the male in general color, but the corresponding areas of all parts of the body are

more brownish than black. The parafrontals with a brownish area at middle. In profile, the parafacials at their narrowest part almost as long as the greatest width of third antennal segment. In frontal view, the front at the level of the posterior ocelli is 0.300 and at base of antennae 0.350 of greatest head width. Frontal triangle reaching to opposite the second strongest parafrontal bristle. Inner and outer vertical bristles subequal; the posterior parafrontal bristle outwardly and backwardly directed and much longer and stronger than the other adjacent one.

Thorax as in male, but the presutural dark area may or may not quite reach the postsutural dark area at the midline. The latter not quite covering middle of postalar callosities. Intra-alars 2; scutellar setulae longer.

Mid femora with a distinct median anterior bristle. Wings with a more distinct brownish yellow tinge.

The dark dorsal abdominal spots fused only on the first visible tergite, those on second and third separated by a median gray vitta. Fourth tergite with a median brown line.

TYPE MATERIAL: Holotype, male, Benduja, north central Liberia, December 1-2, 1943; allotype, female, same data as type; paratypes, four males, three females, same data as type; two males, Jennewunde, Tewa Section, Liberia, November 30, 1943; two females, Robertsport, Liberia, September 15, 1942, one female, December 6, 1943 (F. M. Snyder)

I am grateful to Dr. van Emden, to whom this species is dedicated, for the opportunity to study a pair of *L. simulans* Stein to which this species will trace in his key to Ethiopian *Limnophora* (1951, p. 384). Both sexes of *vanemdeni* are separated from *simulans* by the presence of one or more hairs on the apical one-fourth to one-third of the dorsal surface of the first wing vein, by the shorter haired arista, longer third antennal segment, and the less protuberant oral margin.

Spilogona liberia, new species

MALE: Length, 5.3 to 6.0 mm. Quite similar to the description of *S. quasifasciata* Van Emden (1951, p. 460). However, the front at narrowest part is one-seventh to one-eighth of the greatest head width (0.125 to 0.146) and at lunule (base of antennae) it is 0.26 to 0.29 and at vertex 0.162 to 0.195 of greatest head width. The longest arisal hairs are 1.5 to 2.0 times as long as greatest width of third antennal segment.

Scutellum entirely concolorous with the prescutellar area and without brown dust on any portion. The anterior presutural dorsocentral setula absent or less than one-fourth as long as the single presutural dorsocentral bristle on each side.

First wing vein with two to four minute setulae on the dorsal surface near juncture with costa; these visible best at 30-diameter magnification or more.

Abdominal spots brownish.

TYPE MATERIAL: Holotype, male, Robertsport, Liberia, December 19, 1943, near native village of Zoo; paratypes, eight males, Robertsport, Liberia, November 11, 15, December 4, 6, 7, 12, 1943, near villages of Talla and Bendu; two males, Benduja, north central Liberia, December 1-2, 1943 (F. M. Snyder).

Two specimens of the above series were submitted to Dr. van Emden, and he noted that in *quasifasciata* the arisal hairs are "denser and more perpendicular" and the "abdominal spots of the male smaller, but in posterior view they are contrasting fuscous black."

It is possible that the above specimens might be considered to represent a geographical subspecies of *quasifasciata*, but there appear to be sufficient structural characters present to warrant the proposed status.

***Spilogona semifasciata* Van Emden**

Spilogona semifasciata VAN EMDEN, 1951, Ruwenzori expedition 1934-5, vol. 2, p. 456.

There are four specimens before me from Southern Rhodesia: Salisbury, July, 1932, August, 1933, two males; and Curungwe, July, 1933, one male, one female (A. Cuthbertson). These specimens trace to the above species in Van Emden's key but have the femora mostly yellow, with only a median dark suffusion. It is possible that these specimens, which also have the dark mesonotal spots more reduced than shown in the illustration of this species (Van Emden, 1951, p. 457, fig. 38), might be considered to represent a distinct subspecies. However, until specimens of the typical *semifasciata* can be examined, the occurrence of this form is merely noted.

***Helina congoensis*, new species**

Figure 4

MALE: Length, 7.2 mm. Head black (in profile), the parafrontals and parafacials with dense grayish pruinescence and with a dark brown band on parafacials opposite the juncture of the second and third antennal segments. Cheeks with sparse grayish pruinescence and back of head with more dense pruinescence. In frontal view, the face is grayish pruinose and the front brownish black. Front at narrowest part is 1.2, at vertex 2.2, and at base of anterior parafrontal bristle it is 2.8, times as wide as distance across posterior ocelli inclusive. Parafrontals at narrowest part about as wide as diameter of anterior ocellus. With five large parafrontal bristles on each side and with a shorter one between each, all are continued to the basal one-third. With a small proclinate parafrontal setula slightly anterior to the anterior ocellus. Only the anterior ocellar bristles well developed, the other bristles in vertical area scarcely distinguishable. Cheeks 0.267 of eye height or 0.8 of third antennal segment length. Juncture of parafacials and parafrontals about as long as width of third antennal segment. The anterior level of this juncture is in perpendicular line with oral margin, and the parafacials at narrowest part are 0.5 the length of the juncture. Palpi and antennae black. Third antennal segment two times as long as second. The antennae inserted opposite middle of eyes and reach to their lower margin. Longest arisal hairs as long as width of third antennal segment. Eyes bare.

Thorax black, grayish pruinose; with three broad black vittae, the very broad lateral ones narrowly interrupted by a brownish pruinose stripe along margin of postalar callosity. The median vitta divided at center of the presutural area by a median gray linear stripe. The median stripe brownish at middle of postsutural area and continued over most of the median portion of the scutellum. Pleura with a brownish area across the dorsal two-thirds of the mesopleura and pteropleura, the remainder of pleura grayish pruinose. Presutural acrostical setulae in four to six irregular rows; prescutellar acrostical bristles not differentiated; dorsocentrals 2:3, subequal; intra-alars 2; pra absent; scutellar setulae not descending below level of marginals. Sternopleurals 2:2, not in an equilateral triangle. A single propleural and prostigmatal bristle and with several accessory ventral setulae ad-

jacent to both, but none are more than one-half as long as the bristles.

Legs black, the tibiae somewhat brownish black. Fore femora normal. Fore tibiae with a strong median posterior bristle and without a submedian anterodorsal bristle. Fore tarsi 0.25 longer than the tibiae, the claws and pulvilli very large and equal to the length of fifth tarsal segment, the latter with long apical hairs. Mid femora with a row of anterior and ventral bristles on the basal one-half, the latter considerably longer than the former and with a short but distinct pre-apical anterior and three pre-apical posterior to posterodorsal bristles. Mid tibiae with one weak and two strong posterior bristles on the median three-fifths, the basal one considerably shorter than the other two. Mid tarsi as long as the tibiae, otherwise like the fore tarsi. Hind femora straight, slender, about as long as abdomen, with the usual anterodorsal row and with a complete row of seven anteroventral bristles. Hind tibiae with one posterodorsal bristle at basal one-third, three anterodorsal and two anteroventrals at middle. Mid and hind tarsi slightly longer than the tibiae, otherwise like the fore tarsi.

Wings hyaline, with a brownish yellow tinge. All veins except costa bare, the costal thorn short but distinct. The anal area prominent. Otherwise as in figure 4. Calyptrae yellowish white, the margins somewhat more yellowish. Halteres yellow.

Abdomen black, yellowish gray pruinulent. First two visible tergites with a pair of subapical, small, round spots. The second tergite with a row of apical bristles and the third and fourth each with a row of discals and apicals. Basal sternite bare, others longer than broad and with a pair of long apical bristles and long clothing hairs over most of their surfaces. Fifth sternite distinctly cleft, with numerous setulae, those near base longest, but none are very much longer than the maximum length of the lateral processes.

TYPE MATERIAL: Holotype, male, Rueru, Mt. Mikenno, 9500 feet, Belgian Congo, March 10, 1921.

This species traces to *coniformis* Stein in Van Emden's key to Ethiopian *Helina* (1951, p. 520). The male of *congoensis* is readily separated by the more numerous parafrontal bristles and the broader frons at its narrowest part. *Coniformis* has large abdominal spots on the second and third visible tergites, while *congoensis* has the spots smaller and present on the first and second visible tergites. The very short ultimate section of the fifth vein, if

normal, is considerably different from that of *coniformis* and most species of *Helina* known to me.

***Helina fasciculata*, new species**

Figure 5

MALE: Length, 6.1 mm. Head black, silvery gray pruinulent. The cheeks, frontal vitta, and a spot laterad of the second antennal segment with variable dark reflections. Head 0.4 to 0.5 times higher than long. Cheeks 0.285 of eye height. Juncture of parafacials and parafrontals slightly longer than width of third antennal segment; parafacials slightly narrowed below. Front at narrowest part is 0.142 of greatest head width; at level of posterior ocelli, the front is 1.67, and at base of antennae, 2.16, times the narrowest width of front. Parafrontals at narrowest part not quite so wide as the diameter of the anterior ocellus, and the frontal vitta at the same level 1.8 times as wide as distance across posterior ocelli inclusive. With three pairs of strong parafrontal bristles on each side and with one or two shorter setulae between and also posterior to them; none continued beyond middle of front. Without accessory posterior parafrontal hairs or setulae near the ocellar triangle. Ocellar and outer vertical bristles strong, subequal to anterior parafrontals and slightly shorter and weaker than the vibrissae. Antennae and palpi black. Third antennal segment two times as long as the second, the former extending below lower level of eyes. Arista long plumose, the longest hairs on both surfaces together as long as the length of the third antennal segment. Eyes with sparse, short, scarcely visible hairs (30 \times magnification).

Thorax black, densely gray pruinulent, with a narrow dark vitta inside each row of dorsocentral bristles and a broad irregular darkened presutural area near posthumeral bristles and extending posteriorly to the supra-alar bristles. The pin obscures a large portion of the median portion of the postsutural area in the single specimen at hand, but there appears to be a faint median brown line which joins a very indistinct basal median yellowish brown spot on the scutellum, the latter visible best when viewed directly from above. Acrosticals 0:1; dorsocentrals 2:3, all strong, subequal. Postsutural intra-alars 2, the anterior one almost on a line drawn between the anterior postsutural dorsocentral and the anterior supra-alar bristles, but it appears somewhat closer to the level of the supra-alar than the dorsocentral. Pra very short,

scarcely distinguishable from clothing setulae. Scutellum as setulose as thoracic disc, without setulae descending below level of the strong lateral and apical bristles or the two weaker subbasal and subapicals. Sternopleurals 2:2, the lower anterior one shortest, the posterior one somewhat stronger but neither more than 0.5 to 0.6 of the length of the upper ones. Prostigmatal and propleural bristles strong. Hypopleura bare. Sternopleura without a ventral process or fringe or unusually long ventral hairs or setulae.

Legs black, only articulations of femora and tibiae brownish. Legs, except hind trochanters, of normal shape. Fore femora with a row of strong posterodorsal, posterior, and posteroventral bristles. Fore tibiae with a short median anterodorsal bristle at middle and with a median posterior bristle slightly before the middle on one leg and absent on the other. Fore coxae with only the usual three to five long bristles. Mid femora with a row of anterior and ventral bristles on basal one-half and with a subapical anterior and three subapical dorsal to posterior bristles. Mid tibiae with two median posterior bristles. Hind femora with a row of strong anterodorsal bristles and with a subapical anterior, posterodorsal, and posterior bristle and with about five anteroventral bristles on apical one-half, the longest 0.5 to 0.66 as long as the femora. Hind tibiae with two anterodorsal, two anteroventral, and one posterior to posteroventral median bristles. Without a prominent group of longer setulae near apex on ventral surface. Hind trochanters with a fasciculus of closely placed black bristles as in figure 5. Tarsal claws and pulvilli of all legs long; the fifth tarsal segments with the apical setulae longer than the length of these segments.

Wings subhyaline, with a yellow suffusion along second vein and with a large dark cloud over both cross veins; one wing has an additional dark cloud on the fourth vein between the cross veins. Costal thorn prominent, subequal to length of anterior cross vein and with prominent costal spines before and beyond the thorn, those basad to it about twice as long as costal diameter, while those beyond become gradually shorter and subequal to costal diameter about two-thirds of the distance to juncture of costa with second vein. First vein with two or three minute setulae on dorsal surface at juncture with costa; this juncture in line with anterior cross vein. Other veins bare. Third and fourth veins subparallel and with a slight posterior curvature beginning at center of ultimate section. Calyptrae white, hyaline, the fringe yellow. Halteres yellow.

Abdomen subcylindrical, black, grayish pruinulent, with a pair of irregular or subsquare to subtriangular brown spots on the first to third visible tergites and a faint, brown, irregular median line on the fourth. The larger bristles inserted in brown spots. All tergites with a strong apical lateral bristle, the second with a row of apicals and the third and fourth with a row of discals and apicals. Basal sternite bare. In profile, fifth and sixth visible tergites distinct, slightly globular, but not so prominent as in such species as *hirtipes* Macquart or *hypopygialis* Van Emden. Fifth sternite in profile very prominent, the ventral (mesal) margin concave, the lateral lobes large, broader than basal portion.

TYPE MATERIAL: Holotype, male, Vumba Mountains, Umatali District, Southern Rhodesia, March 1935 (A. Cuthbertson).

This species traces with some difficulty to *basichaeta* Van Emden, and while it is possible that it may be the unknown male of that species, there appear to be enough differences, e.g., tibial color, bristling of hind tibiae, and almost bare eyes, to cause me to refrain from considering this to be the case. The peculiar armature of the hind trochanters suggests *trochanterata* Stein (1914, p. 110), but the different head shape and bristling as seen in Stein's figure as well as different sternopleural and dorsocentral arrangement of bristles would indicate its specific difference.

***Helina tricincta* Stein**

Mydaea tricincta STEIN, 1919, Arch. f. Naturgesch., div. A, vol. 83, no. 1, (1917), p. 125.

The specimens from Addis Ababa recorded by Curran (1938, p. 14) as *Helina plurinotata* Stein appear to be *tricincta* Stein. They are not conspecific with specimens from the Congo determined as *Idiopygus trimaculata* Stein by Curran (1934, p. 6) as tentatively suggested by Van Emden (1951, p. 586). The above Abyssinian specimens are in rather poor condition, but the number of anterodorsal bristles on the mid tibiae appears to vary from one to two; the presence or absence of a posterior bristle on the fore tibiae in both sexes and in individual male specimens is also variable. This variation is reminiscent of Van Emden's notes (1951, p. 580) on the Abyssinian series of *tricincta* examined by him. There is no spot near the juncture of the second and third wing veins, and the spots on the posterior cross vein at the juncture with the fourth and fifth veins are not confluent. The legs are entirely black, and

the abdomen has distinct but rather irregularly shaped spots on the second to fourth visible tergites.

***Euspilaria vumba*, new species**

MALE: Length, 6.0 mm. Head black, brownish red pruinulent. The front at narrowest point is at least 2.0, and at vertex it is 2.6, and at base of antennae 3.6 times as wide as distance across posterior ocelli inclusive. Each parafrontal at narrowest part is as wide as the distance between the inner edges of the posterior ocelli. With four to six pairs of convergent parafrontal bristles which extend posteriorly to the basal two-fifths and with two pairs of backwardly and outwardly directed bristles adjacent to the ocellar triangle. Inner and outer vertical bristles very well developed, the former as long and strong as the anterior ocellars and parafrontals, and almost as long and strong as the vibrissae. With several distinct pairs of bristles directly behind the ocellar triangle. Juncture of parafacials and parafrontals not so long as width of third antennal segment, the parafacials slightly narrower below. Cheeks about as high as length of third antennal segment or 0.25 to 0.33 of eye height. Antennae black, third segment 1.8 to 2.0 times as long as second. Longest arisal hairs as long as width of third antennal segment. Palpi black. Eyes with short but distinct hairs.

Thorax black, brownish gray pruinulent, with a pair of presutural brownish vittae on both sides of the dorsocentral row of bristles and with an additional median vitta which extends from scutellum to opposite the median postsutural dorsocentral bristle. Presutural acrostical setulae irregular. Acrosticals 0:1; dorsocentrals 2:3, the median postsutural one inserted midway between the others. Intra-alars 2, the anterior one in line with the anterior postsutural dorsocentral and pra, the latter not over one-half as long as the posterior notopleural bristle. Without setulae adjacent to either notopleural bristle. Scutellar setulae descending onto ventral surface along sides but not at apex of scutellum. Sternopleurals 2:2. Hypopleura with hairs only below the spiracle.

Coxae and tarsi black, grayish pruinulent; trochanters brownish; femora and tibiae fulvous yellow but the fore femora with a dark posterodorsal and ventral cloud and the basal one-fifth to one-sixth of the tibiae slightly infuscated. Fore femora with the usual rows of bristles. Fore tibiae with only a posterior bristle at